

Remarks

Rejection to Specification and Claims 40-42 and 49 for Introduction of New Matter

In the Office Action the specification is objected to under 35 U.S.C. 132 as introducing new matter and claims 40-42 and 49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement due to the introduction of new matter. These rejections of these claims are respectfully traversed.

The Examiner has stated that the limitation found in claims 40-42 and 49, specifically "the light source emits the first, second, and third wavelength bands of light in the second polarization direction," is not disclosed in the original specification.

The original specification includes a description of an embodiment stating "[t]he light source provides S-polarized light rays that are received by a spectrally selective input wave plate that changes a first wavelength range of light rays to P-polarized light rays and propagates without polarization change second and third wavelength ranges of light rays." Application page 5, line 5. Therefore, in this described embodiment, the light source emits the first, second, and third wavelength bands of light in the second polarization direction (e.g., the S-polarization direction) which are then received by the wave plate and modulated accordingly.

Because the subject matter of claims 40-42 and 49 is disclosed and described in the original specification, the Applicants submit that there has been no addition of new matter. Therefore, the Applicants respectfully request the withdrawal of these rejections of these claims.

35 U.S.C. 102(b) rejection of Claims 33-39, 43, 45-48, 50-51, and 53 in view of Kasama

In the Office Action claims 33-39, 43, 45-48, 50-51 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasama. This rejection of these claims is respectfully traversed.

As amended claim 33, for example, recites:

An apparatus comprising:

- a light source to produce light in first, second and third wavelength bands;
- a plate-type transfective polarizing beam splitter
 - to receive the first, second, and third wavelength bands of light,
 - to transmit, in a first polarization direction, the first wavelength band of light, and
 - to reflect, in a second polarization direction, the second and third wavelength bands of light;
- a color filter
 - to receive the second and third wavelength bands of light,
 - to transmit in the second polarization direction, the second wavelength band of light, and
 - to reflect in the second polarization direction, the third wavelength band of light; and
- first, second and third reflective liquid crystal light valves
 - to selectively reflect portions of the respective first, second and third wavelength bands of light toward a projection lens.

The Examiner restates the definition of “plate” as being a “smooth flat thin piece” and goes on to state that a plate-type transfective polarizing beam splitter (PBS) would therefore be anticipated by the cube PBS (constructed of two prisms), found in Kasama, because prisms have two flat sides inclined relative to one another.

A proper prima facie anticipation rejection requires that the prior art reference relied upon be interpreted by one of the ordinary skill in the art. An interpretation of “plate-type PBS” by focusing on a portion of the definition of one word of the element (i.e., plate = flat) is misconstruing how one of the ordinary skill in the art would interpret the element in its entirety.

The Applicant maintains that one of ordinary skill in the art would recognize a distinction between a plate-type PBS and a cube PBS. As evidence of this common knowledge, the Applicant submits an excerpt, a tutorial on prisms and beamsplitters, discussing the differences between the two types of beamsplitters. Physics of Light and Color; Prisms and Beamsplitters, <http://www.mic-d.com/curriculum/lightandcolor/prisms.html> (a more complete excerpt is attached as an appendix).

A beamsplitter is a common optical component that partially transmits and partially reflects an incident light beam, usually in unequal proportions..... Plate beamsplitters are, as the name implies, optical crown glass plates having a

partially silvered coating designed to produce a desired transmission-to-reflection ratio..... Cube beamsplitters are fabricated by cementing together the hypotenuse faces of a matched pair of right-angle prisms with a partially reflecting film deposited onto the face of one the prisms..... Cube beamsplitters are more resistant to mechanical damage and deformation than plate beamsplitters, primarily because the reflective surface is protected by being sandwiched between the glass prisms.

Additionally, by searching the internet one can easily find dozens of companies that advertise plate or cube PBSs. This marketing strategy and the above tutorial are evidence of a distinction between the two PBSs that is well known in the field. Therefore, a person of ordinary skill in the optical arts would not interpret the Kasama reference, disclosing a cube PBS, as anticipating the plate-type transflective polarizing beam splitter disclosed in claim 33, for example.

This common understanding in the art is also buttressed by the original specification of the present application. For example, the background of the invention lists several difficulties of the cube PBS. “[T]he architecture employing a PBS cube prism and tilted plates.....is disadvantageous because the PBS cube prism is bulky, heavy, has stress birefringence, and skew ray depolarization, and the projection lens requires a long back working distance.” Application page 3, lines 23-31. In contrast, embodiments of the present application are “lighter because no bulky prisms are required ...and less costly because there are no prisms.” Application page 7, lines 4-6.

Thus, Applicants submit that because all of the claim limitations of claim 33, for example, are not taught or suggested by the cited article, an anticipation rejection is improper. It is therefore respectfully requested that the Examiner withdraw the rejection of claim 33.

Claims 34-43 depend from and include the same limitations as claim 33. Therefore, for at least the same reasons stated above, claims 34-43 are patentably distinct from Kasama. The Applicant respectfully requests that the Examiner withdraw the rejection of these claims.

Claims 45-51 and 53 also include a “plate-type transflective polarizing beam splitter” limitation. Therefore, these claims are patentably distinct from Kasama for at

least the same reasons as claim 33. The Applicant respectfully requests that the Examiner withdraw the rejection of these claims.

Allowable Subject Matter

In the Office claims 44 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 44 and 52 depend from claims 33 and 45, respectively. The Applicant respectfully requests that the Examiner withdraw his objection to these claims for the foregoing reasons related to the rejected base claims

Conclusion

In view of the foregoing, the Applicant respectfully submits that claims 33-53 are in condition for allowance. Thus, early issuance of Notice of Allowance is respectfully requested.

If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2972.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393. A Fee Transmittal is enclosed in duplicate for fee processing purposes.

Respectfully submitted,

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